



07/30/14



Technical Report for

Stantec Consulting Services Inc.

Sunoco - Marcus Hook Facility, PA

213402353

Accutest Job Number: JB47862

Sampling Dates: 09/18/13 - 09/19/13

Report to:

Stantec

Lisa.Votta@stantec.com

ATTN: Lisa Votta

Total number of pages in report: 55



Test results contained within this data package meet the requirements
of the National Environmental Laboratory Accreditation Program
and/or state specific certification programs as applicable.

A handwritten signature in black ink that reads "Nancy T. Cole".

Nancy Cole
Laboratory Director

Client Service contact: Marie Meidhof 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, DE, FL, IL, IN, KS, KY, LA, MA, MD, MI, MT, NC,
OH VAP (CL0056), PA, RI, SC, TN, VA, WV, DoD ELAP (L-A-B L2248)

This report shall not be reproduced, except in its entirety, without the written approval of Accutest Laboratories.
Test results relate only to samples analyzed.

Table of Contents

-1-

Section 1: Sample Summary	3
Section 2: Case Narrative/Conformance Summary	4
Section 3: Summary of Hits	8
Section 4: Sample Results	13
4.1: JB47862-1: MH10-1A(0.0-2.0)	14
4.2: JB47862-2: MH10-1A(3.5-4.0)	19
4.3: JB47862-3: MH10-2A(0.0-2.0)	24
4.4: JB47862-4: MH10-2A(4.75-5.25)	29
4.5: JB47862-5: MH10-3A(0.0-2.0)	34
4.6: JB47862-6: MH10-4A(0.0-2.0)	39
4.7: JB47862-7: MH10-4A(5.5-6.0)	44
Section 5: Misc. Forms	49
5.1: Chain of Custody	50
5.2: Chain of Custody (Accutest Labs of New England, Inc.)	54



Sample Summary

Stantec Consulting Services Inc.

Job No: JB47862

Sunoco - Marcus Hook Facility, PA
Project No: 213402353

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
JB47862-1	09/18/13	14:35 JC	09/19/13	SO	Soil	MH10-1A(0.0-2.0)
JB47862-2	09/19/13	13:05 JC	09/19/13	SO	Soil	MH10-1A(3.5-4.0)
JB47862-3	09/18/13	15:30 JC	09/19/13	SO	Soil	MH10-2A(0.0-2.0)
JB47862-4	09/19/13	13:30 JC	09/19/13	SO	Soil	MH10-2A(4.75-5.25)
JB47862-5	09/19/13	11:00 JC	09/19/13	SO	Soil	MH10-3A(0.0-2.0)
JB47862-6	09/19/13	12:35 JC	09/19/13	SO	Soil	MH10-4A(0.0-2.0)
JB47862-7	09/19/13	12:45 JC	09/19/13	SO	Soil	MH10-4A(5.5-6.0)

Soil samples reported on a dry weight basis unless otherwise indicated on result page.



CASE NARRATIVE / CONFORMANCE SUMMARY

Client: Stantec Consulting Services Inc.

Job No JB47862

Site: Sunoco - Marcus Hook Facility, PA

Report Date 10/7/2013 4:46:23 PM

On 09/19/2013, 7 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were received at Accutest Laboratories at a temperature of 1.1 C. Samples were intact and chemically preserved, unless noted below. An Accutest Job Number of JB47862 was assigned to the project. Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Volatiles by GCMS By Method SW846 8260B

Matrix: SO

Batch ID: V2C5159

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JB48850-2MS, JB48850-2MSD were used as the QC samples indicated.
- JB47862-7: Dilution required due to matrix interference.

Matrix: SO

Batch ID: V2C5164

- All method blanks for this batch meet method specific criteria.
- Sample(s) JB48042-5MS, JB48042-5MSD were used as the QC samples indicated.
- JB47862-1: Sample analyzed outside the holding time but the original run within holding time.

Matrix: SO

Batch ID: V3C4608

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JB48710-4MS, JB48710-5DUP were used as the QC samples indicated.

Matrix: SO

Batch ID: V3C4609

- All samples were analyzed within the recommended method holding time.
- Sample(s) JB48882-2MS, JB48882-3DUP were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- RPD(s) for Duplicate for Benzene, Ethylbenzene, Xylene (total) are outside control limits for sample JB48882-3DUP. High RPD due to low concentration of hit

Matrix: SO

Batch ID: VD8729

- All samples were analyzed within the recommended method holding time.
- Sample(s) JB47862-5MS, JB47862-5MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Matrix Spike Recovery(s) for Hexane are outside control limits. Outside control limits due to matrix interference.
- Matrix Spike Duplicate Recovery(s) for Hexane are outside control limits. Outside control limits due to matrix interference.
- JB47862-5: Dilution required due to matrix interference.

Matrix: SO

Batch ID: VI7608

- All samples were analyzed within the recommended method holding time.
- Sample(s) JB48379-7MS, JB48379-7MSD were used as the QC samples indicated.

Volatiles by GCMS By Method SW846 8260B

Matrix: SO

Batch ID: VI7608

- All method blanks for this batch meet method specific criteria.

Extractables by GCMS By Method SW846 8270D

Matrix: SO

Batch ID: OP69179

- All samples were extracted within the recommended method holding time.
- Sample(s) JB47862-1MS, JB47862-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Matrix Spike Recovery(s) for Benzo(a)anthracene, Benzo(g,h,i)perylene are outside control limits. Outside control limits due to matrix interference.
- JB47862-1: Dilution required due to viscosity of extract matrix
- JB47862-4 for Terphenyl-d14: Outside control limits due to dilution.
- JB47862-4 for 2-Fluorobiphenyl: Outside control limits due to dilution.
- JB47862-4 for 2,4,6-Tribromophenol: Outside control limits due to dilution.
- JB47862-7 for 2-Fluorobiphenyl: Outside control limits due to dilution.
- JB47862-2 for 2-Fluorobiphenyl: Outside control limits due to dilution.
- JB47862-4 for Nitrobenzene-d5: Outside control limits due to dilution.
- JB47862-4 for 2-Fluorophenol: Outside control limits due to dilution.
- JB47862-4 for Phenol-d5: Outside control limits due to dilution.
- JB47862-5 for 2-Fluorobiphenyl: Outside control limits due to dilution.
- JB47862-5 for 2-Fluorophenol: Outside control limits due to dilution.
- JB47862-5 for Nitrobenzene-d5: Outside control limits due to dilution.
- JB47862-7 for Phenol-d5: Outside of in house control limits, but within reasonable method recovery limits.

Volatiles by GC By Method SW846 8011

Matrix: SO

Batch ID: M:OP35003

- The data for SW846 8011 meets quality control requirements.
- JB47862-1: Analysis performed at Accutest Laboratories, Marlborough, MA.
- JB47862-4: Analysis performed at Accutest Laboratories, Marlborough, MA.
- JB47862-2: Analysis performed at Accutest Laboratories, Marlborough, MA.
- JB47862-5: Analysis performed at Accutest Laboratories, Marlborough, MA.
- JB47862-3: Analysis performed at Accutest Laboratories, Marlborough, MA.
- JB47862-7: Analysis performed at Accutest Laboratories, Marlborough, MA.
- JB47862-6: Analysis performed at Accutest Laboratories, Marlborough, MA.

Metals By Method SW846 6010C

Matrix: SO

Batch ID: MP74915

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JB47817-3MS, JB47817-3MSD, JB47817-3SDL were used as the QC samples for metals.
- JB47862-6 for Vanadium: Elevated detection limit due to dilution required for high interfering element.
- JB47862-6 for Nickel: Elevated detection limit due to dilution required for high interfering element.
- JB47862-6 for Lead: Elevated detection limit due to dilution required for high interfering element.
- JB47862-5 for Vanadium: Elevated detection limit due to dilution required for high interfering element.
- JB47862-5 for Nickel: Elevated detection limit due to dilution required for high interfering element.
- JB47862-5 for Lead: Elevated detection limit due to dilution required for high interfering element.

Wet Chemistry By Method SM2540 G-97

Matrix: SO

Batch ID: GN91980

- The data for SM2540 G-97 meets quality control requirements.

Accutest certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting Accutest's Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

Accutest Laboratories is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. Data release is authorized by Accutest Laboratories indicated via signature on the report cover



SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Accutest New Jersey

Job No JB47862

Site: SECORPAE: Sunoco - Marcus Hook Facility, PA

Report Date 10/3/2013 11:56:22 AM

7 Sample(s) were collected on between 09/18/2013 and 09/19/2013 and were received at Accutest on 09/19/2013 properly preserved, at 1.9 Deg. C and intact. These Samples received an Accutest job number of JB47862. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Volatiles by GC By Method SW846 8011

Matrix SO	Batch ID: OP35003
------------------	--------------------------

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JB47863-2MS, JB47863-2MSD were used as the QC samples indicated.
- JB47862-1 through JB47862-7 for Bromofluorobenzene (S): Outside control limits due to possible matrix interference.
- OP35003-MS/MSD for Bromofluorobenzene (S): Surrogate standard not added.
- OP35003-BS for Bromofluorobenzene (S): Analyte recovery satisfactory.
- OP35003-MB for Bromofluorobenzene (S): Samples are non-detect for analyte.

The Accutest Laboratories of New England certifies that all analysis were performed within method specification. It is further recommended that this report to be used in its entirety. The Accutest Laboratories of NE, Laboratory Director or assignee as verified by the signature on the cover page has authorized the release of this report(JB47862).

Summary of Hits

Page 1 of 5

Job Number: JB47862

Account: Stantec Consulting Services Inc.

Project: Sunoco - Marcus Hook Facility, PA

Collected: 09/18/13 thru 09/19/13

3

Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
---------------	------------------	-----------------	----	-----	-------	--------

JB47862-1 MH10-1A(0.0-2.0)

Benzene ^a	5860	130	16	ug/kg	SW846 8260B
Toluene	26.7	1.0	0.15	ug/kg	SW846 8260B
Ethylbenzene	11.2	1.0	0.18	ug/kg	SW846 8260B
Xylene (total)	23.2	1.0	0.18	ug/kg	SW846 8260B
Cyclohexane	79.0	5.1	0.26	ug/kg	SW846 8260B
Hexane	21.4	5.1	0.55	ug/kg	SW846 8260B
Isopropylbenzene	0.40 J	5.1	0.15	ug/kg	SW846 8260B
Benzo(a)anthracene ^b	1890	190	61	ug/kg	SW846 8270D
Benzo(a)pyrene ^b	1480	190	57	ug/kg	SW846 8270D
Benzo(b)fluoranthene ^b	883	190	62	ug/kg	SW846 8270D
Benzo(g,h,i)perylene ^b	2340	190	69	ug/kg	SW846 8270D
Benzo(k)fluoranthene ^b	205	190	70	ug/kg	SW846 8270D
Chrysene ^b	634	190	63	ug/kg	SW846 8270D
Fluoranthene ^b	303	190	82	ug/kg	SW846 8270D
Indeno(1,2,3-cd)pyrene ^b	386	190	65	ug/kg	SW846 8270D
Pyrene ^b	2660	190	72	ug/kg	SW846 8270D
Cobalt	7.7	6.0	0.079	mg/kg	SW846 6010C
Lead	46.7	2.4	0.25	mg/kg	SW846 6010C
Nickel	20.4	4.8	0.094	mg/kg	SW846 6010C
Vanadium	53.7	6.0	0.087	mg/kg	SW846 6010C
Zinc	78.3	2.4	0.28	mg/kg	SW846 6010C

JB47862-2 MH10-1A(3.5-4.0)

Benzene	1490	120	15	ug/kg	SW846 8260B
Toluene	1080	120	17	ug/kg	SW846 8260B
Ethylbenzene	366000	6000	1000	ug/kg	SW846 8260B
Xylene (total)	1070000	6000	1100	ug/kg	SW846 8260B
sec-Butylbenzene	4200	600	21	ug/kg	SW846 8260B
tert-Butylbenzene	482 J	600	19	ug/kg	SW846 8260B
Cyclohexane	18900	600	31	ug/kg	SW846 8260B
Hexane	16500	600	64	ug/kg	SW846 8260B
Isopropylbenzene	19600	600	18	ug/kg	SW846 8260B
1,2,4-Trimethylbenzene	77200	30000	950	ug/kg	SW846 8260B
1,3,5-Trimethylbenzene	25800 J	30000	1300	ug/kg	SW846 8260B
Acenaphthene	1140	210	62	ug/kg	SW846 8270D
Anthracene	662	210	75	ug/kg	SW846 8270D
Benzo(a)anthracene	414	210	70	ug/kg	SW846 8270D
Benzo(a)pyrene	246	210	65	ug/kg	SW846 8270D
Benzo(b)fluoranthene	130 J	210	71	ug/kg	SW846 8270D
Benzo(g,h,i)perylene	219	210	80	ug/kg	SW846 8270D
1,1'-Biphenyl	440	430	25	ug/kg	SW846 8270D
Chrysene	847	210	72	ug/kg	SW846 8270D

Summary of Hits

Page 2 of 5

Job Number: JB47862
Account: Stantec Consulting Services Inc.
Project: Sunoco - Marcus Hook Facility, PA
Collected: 09/18/13 thru 09/19/13

3

Lab Sample ID Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
Fluoranthene	256	210	94	ug/kg	SW846 8270D	
Fluorene	1720	210	70	ug/kg	SW846 8270D	
2-Methylnaphthalene	32800	860	240	ug/kg	SW846 8270D	
Naphthalene	12500	210	58	ug/kg	SW846 8270D	
Phenanthrene	5400	210	97	ug/kg	SW846 8270D	
Pyrene	1330	210	82	ug/kg	SW846 8270D	
Cobalt	24.5	5.0	0.066	mg/kg	SW846 6010C	
Lead	24.5	2.0	0.21	mg/kg	SW846 6010C	
Nickel	41.5	4.0	0.079	mg/kg	SW846 6010C	
Vanadium	65.4	5.0	0.073	mg/kg	SW846 6010C	
Zinc	153	2.0	0.23	mg/kg	SW846 6010C	

JB47862-3 MH10-2A(0.0-2.0)

Benzene	0.50 J	1.1	0.13	ug/kg	SW846 8260B
Toluene	0.36 J	1.1	0.12	ug/kg	SW846 8260B
Xylene (total)	1.3	1.1	0.15	ug/kg	SW846 8260B
Cyclohexane	2.1 J	5.5	0.14	ug/kg	SW846 8260B
1,2,4-Trimethylbenzene	1.8 J	5.5	0.23	ug/kg	SW846 8260B
1,3,5-Trimethylbenzene	1.5 J	5.5	0.18	ug/kg	SW846 8260B
Acenaphthene	172	42	12	ug/kg	SW846 8270D
Anthracene	71.3	42	15	ug/kg	SW846 8270D
Benzo(a)anthracene	67.2	42	14	ug/kg	SW846 8270D
Benzo(a)pyrene	52.5	42	13	ug/kg	SW846 8270D
Benzo(b)fluoranthene	26.4 J	42	14	ug/kg	SW846 8270D
Benzo(g,h,i)perylene	58.7	42	16	ug/kg	SW846 8270D
Chrysene	163	42	14	ug/kg	SW846 8270D
Fluoranthene	65.9	42	19	ug/kg	SW846 8270D
Fluorene	183	42	14	ug/kg	SW846 8270D
2-Methylnaphthalene	407	84	23	ug/kg	SW846 8270D
Phenanthrene	593	42	19	ug/kg	SW846 8270D
Pyrene	314	42	16	ug/kg	SW846 8270D
Cobalt	14.3	5.1	0.067	mg/kg	SW846 6010C
Lead	17.8	2.0	0.22	mg/kg	SW846 6010C
Nickel	47.6	4.1	0.081	mg/kg	SW846 6010C
Vanadium	64.1	5.1	0.075	mg/kg	SW846 6010C
Zinc	74.5	2.0	0.24	mg/kg	SW846 6010C

JB47862-4 MH10-2A(4.75-5.25)

Benzene	3660	130	16	ug/kg	SW846 8260B
Toluene	2430	130	18	ug/kg	SW846 8260B
Ethylbenzene	17500	130	23	ug/kg	SW846 8260B
Xylene (total)	60600	130	23	ug/kg	SW846 8260B
sec-Butylbenzene	11400	650	23	ug/kg	SW846 8260B

Summary of Hits

Page 3 of 5

Job Number: JB47862

Account: Stantec Consulting Services Inc.

Project: Sunoco - Marcus Hook Facility, PA

Collected: 09/18/13 thru 09/19/13

3

Lab Sample ID Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
tert-Butylbenzene	2380	650	21	ug/kg	SW846 8260B	
Cyclohexane	43100	13000	670	ug/kg	SW846 8260B	
Hexane	4460	650	70	ug/kg	SW846 8260B	
Isopropylbenzene	14500	650	19	ug/kg	SW846 8260B	
1,2,4-Trimethylbenzene	167000	13000	420	ug/kg	SW846 8260B	
1,3,5-Trimethylbenzene	80800	13000	570	ug/kg	SW846 8260B	
Acenaphthene	3160	200	59	ug/kg	SW846 8270D	
Anthracene	3470	200	71	ug/kg	SW846 8270D	
Benzo(a)anthracene	1510	200	66	ug/kg	SW846 8270D	
Benzo(a)pyrene	652	200	62	ug/kg	SW846 8270D	
Benzo(b)fluoranthene	727	200	68	ug/kg	SW846 8270D	
Benzo(g,h,i)perylene	874	200	75	ug/kg	SW846 8270D	
Chrysene	3990	200	68	ug/kg	SW846 8270D	
Dibenz(a,h)anthracene	142 J	200	69	ug/kg	SW846 8270D	
bis(2-Ethylhexyl)phthalate	709	400	180	ug/kg	SW846 8270D	
Fluoranthene	2000	200	89	ug/kg	SW846 8270D	
Fluorene	19600	200	66	ug/kg	SW846 8270D	
Indeno(1,2,3-cd)pyrene	305	200	70	ug/kg	SW846 8270D	
2-Methylnaphthalene	216000	8100	2300	ug/kg	SW846 8270D	
Naphthalene	47800	4000	1100	ug/kg	SW846 8270D	
Phenanthrene	51000	4000	1800	ug/kg	SW846 8270D	
Pyrene	9750	200	78	ug/kg	SW846 8270D	
Cobalt	5.1 B	6.3	0.084	mg/kg	SW846 6010C	
Lead	38.9	2.5	0.27	mg/kg	SW846 6010C	
Nickel	15.0	5.1	0.10	mg/kg	SW846 6010C	
Vanadium	41.9	6.3	0.093	mg/kg	SW846 6010C	
Zinc	46.7	2.5	0.30	mg/kg	SW846 6010C	

JB47862-5 MH10-3A(0.0-2.0)

Ethylbenzene c	43.8 J	120	31	ug/kg	SW846 8260B
sec-Butylbenzene c	1920	590	13	ug/kg	SW846 8260B
tert-Butylbenzene c	381 J	590	35	ug/kg	SW846 8260B
Cyclohexane c	310 J	590	15	ug/kg	SW846 8260B
Isopropylbenzene c	2020	590	8.8	ug/kg	SW846 8260B
Acenaphthene	1740	34	9.9	ug/kg	SW846 8270D
Anthracene	924	34	12	ug/kg	SW846 8270D
Benzo(a)anthracene	1030	34	11	ug/kg	SW846 8270D
Benzo(a)pyrene	1130	34	10	ug/kg	SW846 8270D
Benzo(b)fluoranthene	345	34	11	ug/kg	SW846 8270D
Benzo(g,h,i)perylene	1090	34	13	ug/kg	SW846 8270D
Benzo(k)fluoranthene	319	34	13	ug/kg	SW846 8270D
Chrysene	2620	34	12	ug/kg	SW846 8270D
Dibenz(a,h)anthracene	324	34	12	ug/kg	SW846 8270D
bis(2-Ethylhexyl)phthalate	244	69	30	ug/kg	SW846 8270D

Summary of Hits

Job Number: JB47862
 Account: Stantec Consulting Services Inc.
 Project: Sunoco - Marcus Hook Facility, PA
 Collected: 09/18/13 thru 09/19/13

Lab Sample ID Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
Fluoranthene	987	340	150	ug/kg	SW846 8270D	
Fluorene	4310	340	110	ug/kg	SW846 8270D	
Indeno(1,2,3-cd)pyrene	256	34	12	ug/kg	SW846 8270D	
2-Methylnaphthalene	20700	690	190	ug/kg	SW846 8270D	
Phenanthrene	10800	340	160	ug/kg	SW846 8270D	
Pyrene	5550	340	130	ug/kg	SW846 8270D	
Cobalt	11.2	5.7	0.075	mg/kg	SW846 6010C	
Lead d	53.6	4.5	0.48	mg/kg	SW846 6010C	
Nickel d	106	9.1	0.18	mg/kg	SW846 6010C	
Vanadium d	184	28	0.41	mg/kg	SW846 6010C	
Zinc	591	2.3	0.26	mg/kg	SW846 6010C	

JB47862-6 MH10-4A(0.0-2.0)

Cyclohexane	0.59 J	4.9	0.12	ug/kg	SW846 8260B
Hexane	0.90 J	4.9	0.23	ug/kg	SW846 8260B
Benzo(a)pyrene	16.4 J	34	10	ug/kg	SW846 8270D
Benzo(b)fluoranthene	18.6 J	34	11	ug/kg	SW846 8270D
Benzo(g,h,i)perylene	74.8	34	13	ug/kg	SW846 8270D
Chrysene	22.8 J	34	12	ug/kg	SW846 8270D
Fluoranthene	29.7 J	34	15	ug/kg	SW846 8270D
Pyrene	31.6 J	34	13	ug/kg	SW846 8270D
Cobalt	9.8	5.8	0.077	mg/kg	SW846 6010C
Lead d	54.9	7.0	0.74	mg/kg	SW846 6010C
Nickel d	106	14	0.28	mg/kg	SW846 6010C
Vanadium d	173	17	0.25	mg/kg	SW846 6010C
Zinc	279	2.3	0.27	mg/kg	SW846 6010C

JB47862-7 MH10-4A(5.5-6.0)

Benzene c	77.7 J	120	15	ug/kg	SW846 8260B
Toluene c	32.5 J	120	17	ug/kg	SW846 8260B
Ethylbenzene c	183	120	21	ug/kg	SW846 8260B
Xylene (total) c	323	120	22	ug/kg	SW846 8260B
sec-Butylbenzene c	270 J	610	22	ug/kg	SW846 8260B
Cyclohexane c	697	610	31	ug/kg	SW846 8260B
Hexane c	453 J	610	66	ug/kg	SW846 8260B
Isopropylbenzene c	335 J	610	18	ug/kg	SW846 8260B
1,2,4-Trimethylbenzene c	2050	610	19	ug/kg	SW846 8260B
1,3,5-Trimethylbenzene c	547 J	610	27	ug/kg	SW846 8260B
Acenaphthene	2920	41	12	ug/kg	SW846 8270D
Anthracene	1320	41	14	ug/kg	SW846 8270D
Benzo(a)anthracene	138	41	13	ug/kg	SW846 8270D
Benzo(a)pyrene	87.0	41	13	ug/kg	SW846 8270D
Benzo(b)fluoranthene	33.8 J	41	14	ug/kg	SW846 8270D

Summary of Hits

Job Number: JB47862

Account: Stantec Consulting Services Inc.

Project: Sunoco - Marcus Hook Facility, PA

Collected: 09/18/13 thru 09/19/13

Lab Sample ID Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
Benzo(g,h,i)perylene	81.9	41	15	ug/kg	SW846 8270D	
Benzo(k)fluoranthene	32.1 J	41	16	ug/kg	SW846 8270D	
Chrysene	287	41	14	ug/kg	SW846 8270D	
Fluoranthene	355	41	18	ug/kg	SW846 8270D	
Fluorene	5110	160	54	ug/kg	SW846 8270D	
Indeno(1,2,3-cd)pyrene	21.4 J	41	14	ug/kg	SW846 8270D	
2-Methylnaphthalene	69900	3300	920	ug/kg	SW846 8270D	
Phenanthrene	10000	160	75	ug/kg	SW846 8270D	
Pyrene	2080	41	16	ug/kg	SW846 8270D	
Cobalt	10.2	6.5	0.086	mg/kg	SW846 6010C	
Lead	17.0	2.6	0.28	mg/kg	SW846 6010C	
Nickel	16.0	5.2	0.10	mg/kg	SW846 6010C	
Vanadium	57.1	6.5	0.095	mg/kg	SW846 6010C	
Zinc	54.4	2.6	0.30	mg/kg	SW846 6010C	

(a) Sample analyzed outside the holding time but the original run within holding time.

(b) Dilution required due to viscosity of extract matrix

(c) Dilution required due to matrix interference.

(d) Elevated detection limit due to dilution required for high interfering element.



4

Sample Results

Report of Analysis

Report of Analysis

Page 1 of 1

Client Sample ID:	MH10-1A(0.0-2.0)	Date Sampled:	09/18/13
Lab Sample ID:	JB47862-1	Date Received:	09/19/13
Matrix:	SO - Soil	Percent Solids:	85.5
Method:	SW846 8260B		
Project:	Sunoco - Marcus Hook Facility, PA		

	File ID	DF	Analyzed By	Prep Date	Prep Batch	Analytical Batch
Run #1	3C103381.D	1	10/01/13 TS	n/a	n/a	V3C4608
Run #2 ^a	2C112152.D	1	10/03/13 DR	n/a	n/a	V2C5164

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.7 g		
Run #2	4.9 g	10.0 ml	100 ul

Leaded Gasoline and Aviation Gas List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	5860 ^b	130	16	ug/kg	
108-88-3	Toluene	26.7	1.0	0.15	ug/kg	
100-41-4	Ethylbenzene	11.2	1.0	0.18	ug/kg	
1330-20-7	Xylene (total)	23.2	1.0	0.18	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.35	ug/kg	
135-98-8	sec-Butylbenzene	ND	5.1	0.18	ug/kg	
98-06-6	tert-Butylbenzene	ND	5.1	0.17	ug/kg	
110-82-7	Cyclohexane	79.0	5.1	0.26	ug/kg	
107-06-2	1,2-Dichloroethane	ND	1.0	0.33	ug/kg	
110-54-3	Hexane	21.4	5.1	0.55	ug/kg	
98-82-8	Isopropylbenzene	0.40	5.1	0.15	ug/kg	J
95-63-6	1,2,4-Trimethylbenzene	ND	5.1	0.16	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	5.1	0.23	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	92%	109%	59-130%
17060-07-0	1,2-Dichloroethane-D4	91%	104%	65-123%
2037-26-5	Toluene-D8	91%	112%	80-124%
460-00-4	4-Bromofluorobenzene	92%	98%	71-132%

(a) Sample analyzed outside the holding time but the original run within holding time.

(b) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 2

Client Sample ID:	MH10-1A(0.0-2.0)	Date Sampled:	09/18/13
Lab Sample ID:	JB47862-1	Date Received:	09/19/13
Matrix:	SO - Soil	Percent Solids:	85.5
Method:	SW846 8270D SW846 3550C		
Project:	Sunoco - Marcus Hook Facility, PA		

Run #1 ^a	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	6P524.D	5	09/26/13	KR	09/23/13	OP69179	E6P23

	Initial Weight	Final Volume
Run #1	31.4 g	1.0 ml
Run #2		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
105-67-9	2,4-Dimethylphenol	ND	930	310	ug/kg	
51-28-5	2,4-Dinitrophenol	ND	3700	230	ug/kg	
95-48-7	2-Methylphenol	ND	370	210	ug/kg	
	3&4-Methylphenol	ND	370	240	ug/kg	
100-02-7	4-Nitrophenol	ND	1900	310	ug/kg	
108-95-2	Phenol	ND	370	200	ug/kg	
83-32-9	Acenaphthene	ND	190	54	ug/kg	
120-12-7	Anthracene	ND	190	65	ug/kg	
56-55-3	Benzo(a)anthracene	1890	190	61	ug/kg	
50-32-8	Benzo(a)pyrene	1480	190	57	ug/kg	
205-99-2	Benzo(b)fluoranthene	883	190	62	ug/kg	
191-24-2	Benzo(g,h,i)perylene	2340	190	69	ug/kg	
207-08-9	Benzo(k)fluoranthene	205	190	70	ug/kg	
92-52-4	1,1'-Biphenyl	ND	370	22	ug/kg	
218-01-9	Chrysene	634	190	63	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	190	64	ug/kg	
84-74-2	Di-n-butyl phthalate	ND	370	41	ug/kg	
84-66-2	Diethyl phthalate	ND	370	64	ug/kg	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	370	160	ug/kg	
206-44-0	Fluoranthene	303	190	82	ug/kg	
86-73-7	Fluorene	ND	190	61	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	386	190	65	ug/kg	
91-57-6	2-Methylnaphthalene	ND	370	100	ug/kg	
91-20-3	Naphthalene	ND	190	51	ug/kg	
85-01-8	Phenanthrene	ND	190	85	ug/kg	
129-00-0	Pyrene	2660	190	72	ug/kg	
110-86-1	Pyridine	ND	370	74	ug/kg	
91-22-5	Quinoline	ND	930	180	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	41%		13-110%

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Page 2 of 2

Client Sample ID:	MH10-1A(0.0-2.0)	Date Sampled:	09/18/13
Lab Sample ID:	JB47862-1	Date Received:	09/19/13
Matrix:	SO - Soil	Percent Solids:	85.5
Method:	SW846 8270D SW846 3550C		
Project:	Sunoco - Marcus Hook Facility, PA		

ABN Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-62-2	Phenol-d5	45%		15-110%
118-79-6	2,4,6-Tribromophenol	46%		20-123%
4165-60-0	Nitrobenzene-d5	35%		10-110%
321-60-8	2-Fluorobiphenyl	51%		17-110%
1718-51-0	Terphenyl-d14	53%		30-124%

(a) Dilution required due to viscosity of extract matrix

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	MH10-1A(0.0-2.0)	Date Sampled:	09/18/13
Lab Sample ID:	JB47862-1	Date Received:	09/19/13
Matrix:	SO - Soil	Percent Solids:	85.5
Method:	SW846 8011 SW846 3550B		
Project:	Sunoco - Marcus Hook Facility, PA		

Run #1 ^a	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	BB51254.D	1	10/01/13	AMA	09/29/13	M:OP35003	M:GBB3022

	Initial Weight	Final Volume
Run #1	30.2 g	50.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	2.9	1.1	ug/kg	
CAS No. Surrogate Recoveries Run# 1 Run# 2 Limits						
460-00-4	Bromofluorobenzene (S)	237% ^b			61-167%	
460-00-4	Bromofluorobenzene (S)	114%			61-167%	

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.

(b) Outside control limits due to possible matrix interference.

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	MH10-1A(0.0-2.0)	Date Sampled:	09/18/13
Lab Sample ID:	JB47862-1	Date Received:	09/19/13
Matrix:	SO - Soil	Percent Solids:	85.5
Project:	Sunoco - Marcus Hook Facility, PA		

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cobalt	7.7	6.0	0.079	mg/kg	1	09/30/13	10/02/13	KK	SW846 6010C ¹
Lead	46.7	2.4	0.25	mg/kg	1	09/30/13	10/02/13	KK	SW846 6010C ¹
Nickel	20.4	4.8	0.094	mg/kg	1	09/30/13	10/02/13	KK	SW846 6010C ¹
Vanadium	53.7	6.0	0.087	mg/kg	1	09/30/13	10/02/13	KK	SW846 6010C ¹
Zinc	78.3	2.4	0.28	mg/kg	1	09/30/13	10/02/13	KK	SW846 6010C ¹

(1) Instrument QC Batch: MA32278

(2) Prep QC Batch: MP74915

RL = Reporting Limit
 MDL = Method Detection Limit

U = Indicates a result < MDL
 B = Indicates a result > = MDL but < RL

Report of Analysis

Page 1 of 1

Client Sample ID:	MH10-1A(3.5-4.0)	Date Sampled:	09/19/13
Lab Sample ID:	JB47862-2	Date Received:	09/19/13
Matrix:	SO - Soil	Percent Solids:	77.2
Method:	SW846 8260B		
Project:	Sunoco - Marcus Hook Facility, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2C112072.D	1	10/01/13	DR	n/a	n/a	V2C5159
Run #2	2C112154.D	1	10/03/13	DR	n/a	n/a	V2C5164

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	6.2 g	10.0 ml	100 ul
Run #2	6.2 g	10.0 ml	2.0 ul

Leaded Gasoline and Aviation Gas List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	1490	120	15	ug/kg	
108-88-3	Toluene	1080	120	17	ug/kg	
100-41-4	Ethylbenzene	366000 ^a	6000	1000	ug/kg	
1330-20-7	Xylene (total)	1070000 ^a	6000	1100	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	120	41	ug/kg	
135-98-8	sec-Butylbenzene	4200	600	21	ug/kg	
98-06-6	tert-Butylbenzene	482	600	19	ug/kg	J
110-82-7	Cyclohexane	18900	600	31	ug/kg	
107-06-2	1,2-Dichloroethane	ND	120	38	ug/kg	
110-54-3	Hexane	16500	600	64	ug/kg	
98-82-8	Isopropylbenzene	19600	600	18	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	77200 ^a	30000	950	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	25800 ^a	30000	1300	ug/kg	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	90%	111%	59-130%
17060-07-0	1,2-Dichloroethane-D4	85%	104%	65-123%
2037-26-5	Toluene-D8	99%	111%	80-124%
460-00-4	4-Bromofluorobenzene	83%	99%	71-132%

(a) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 2

Client Sample ID:	MH10-1A(3.5-4.0)	Date Sampled:	09/19/13
Lab Sample ID:	JB47862-2	Date Received:	09/19/13
Matrix:	SO - Soil	Percent Solids:	77.2
Method:	SW846 8270D SW846 3550C		
Project:	Sunoco - Marcus Hook Facility, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6P797.D	5	10/03/13	KR	09/23/13	OP69179	E6P32
Run #2	6P826.D	10	10/04/13	KR	09/23/13	OP69179	E6P33

	Initial Weight	Final Volume
Run #1	30.3 g	1.0 ml
Run #2	30.3 g	1.0 ml

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
105-67-9	2,4-Dimethylphenol	ND	1100	360	ug/kg	
51-28-5	2,4-Dinitrophenol	ND	4300	260	ug/kg	
95-48-7	2-Methylphenol	ND	430	240	ug/kg	
	3&4-Methylphenol	ND	430	270	ug/kg	
100-02-7	4-Nitrophenol	ND	2100	360	ug/kg	
108-95-2	Phenol	ND	430	220	ug/kg	
83-32-9	Acenaphthene	1140	210	62	ug/kg	
120-12-7	Anthracene	662	210	75	ug/kg	
56-55-3	Benzo(a)anthracene	414	210	70	ug/kg	
50-32-8	Benzo(a)pyrene	246	210	65	ug/kg	
205-99-2	Benzo(b)fluoranthene	130	210	71	ug/kg	J
191-24-2	Benzo(g,h,i)perylene	219	210	80	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	210	80	ug/kg	
92-52-4	1,1'-Biphenyl	440	430	25	ug/kg	
218-01-9	Chrysene	847	210	72	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	210	73	ug/kg	
84-74-2	Di-n-butyl phthalate	ND	430	47	ug/kg	
84-66-2	Diethyl phthalate	ND	430	73	ug/kg	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	430	190	ug/kg	
206-44-0	Fluoranthene	256	210	94	ug/kg	
86-73-7	Fluorene	1720	210	70	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	210	74	ug/kg	
91-57-6	2-Methylnaphthalene	32800 ^a	860	240	ug/kg	
91-20-3	Naphthalene	12500	210	58	ug/kg	
85-01-8	Phenanthrene	5400	210	97	ug/kg	
129-00-0	Pyrene	1330	210	82	ug/kg	
110-86-1	Pyridine	ND	430	86	ug/kg	
91-22-5	Quinoline	ND	1100	200	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	93%	98%	13-110%

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Page 2 of 2

Client Sample ID:	MH10-1A(3.5-4.0)	Date Sampled:	09/19/13
Lab Sample ID:	JB47862-2	Date Received:	09/19/13
Matrix:	SO - Soil	Percent Solids:	77.2
Method:	SW846 8270D SW846 3550C		
Project:	Sunoco - Marcus Hook Facility, PA		

ABN Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-62-2	Phenol-d5	70%	90%	15-110%
118-79-6	2,4,6-Tribromophenol	113%	120%	20-123%
4165-60-0	Nitrobenzene-d5	114% ^b	90%	10-110%
321-60-8	2-Fluorobiphenyl	109%	114% ^b	17-110%
1718-51-0	Terphenyl-d14	89%	110%	30-124%

(a) Result is from Run# 2

(b) Outside of in house control limits due to dilution, but within reasonable method recovery limits.

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID: MH10-1A(3.5-4.0)
Lab Sample ID: JB47862-2
Matrix: SO - Soil
Method: SW846 8011 SW846 3550B
Project: Sunoco - Marcus Hook Facility, PA

Date Sampled: 09/19/13
Date Received: 09/19/13
Percent Solids: 77.2

Run #1 ^a	File ID BB51255.D	DF 1	Analyzed 10/01/13	By AMA	Prep Date 09/29/13	Prep Batch M:OP35003	Analytical Batch M:GBB3022
Run #2							

Initial Weight Run #1 30.3 g	Final Volume 50.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	3.2	1.2	ug/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
460-00-4	Bromofluorobenzene (S)	250% ^b		61-167%		
460-00-4	Bromofluorobenzene (S)	109%		61-167%		

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.

(b) Outside control limits due to possible matrix interference.

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	MH10-1A(3.5-4.0)	Date Sampled:	09/19/13
Lab Sample ID:	JB47862-2	Date Received:	09/19/13
Matrix:	SO - Soil	Percent Solids:	77.2
Project:	Sunoco - Marcus Hook Facility, PA		

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cobalt	24.5	5.0	0.066	mg/kg	1	09/30/13	10/02/13	KK	SW846 6010C ¹
Lead	24.5	2.0	0.21	mg/kg	1	09/30/13	10/02/13	KK	SW846 6010C ¹
Nickel	41.5	4.0	0.079	mg/kg	1	09/30/13	10/02/13	KK	SW846 6010C ¹
Vanadium	65.4	5.0	0.073	mg/kg	1	09/30/13	10/02/13	KK	SW846 6010C ¹
Zinc	153	2.0	0.23	mg/kg	1	09/30/13	10/02/13	KK	SW846 6010C ¹

(1) Instrument QC Batch: MA32278

(2) Prep QC Batch: MP74915

RL = Reporting Limit
 MDL = Method Detection Limit

U = Indicates a result < MDL
 B = Indicates a result > = MDL but < RL

Report of Analysis

Page 1 of 1

4.3
4

Client Sample ID:	MH10-2A(0.0-2.0)	Date Sampled:	09/18/13
Lab Sample ID:	JB47862-3	Date Received:	09/19/13
Matrix:	SO - Soil	Percent Solids:	77.1
Method:	SW846 8260B		
Project:	Sunoco - Marcus Hook Facility, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3C103423.D	1	10/02/13	TS	n/a	n/a	V3C4609
Run #2							

	Initial Weight
Run #1	5.9 g
Run #2	

Leaded Gasoline and Aviation Gas List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	0.50	1.1	0.13	ug/kg	J
108-88-3	Toluene	0.36	1.1	0.12	ug/kg	J
100-41-4	Ethylbenzene	ND	1.1	0.29	ug/kg	
1330-20-7	Xylene (total)	1.3	1.1	0.15	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	1.1	0.26	ug/kg	
135-98-8	sec-Butylbenzene	ND	5.5	0.13	ug/kg	
98-06-6	tert-Butylbenzene	ND	5.5	0.32	ug/kg	
110-82-7	Cyclohexane	2.1	5.5	0.14	ug/kg	J
107-06-2	1,2-Dichloroethane	ND	1.1	0.15	ug/kg	
110-54-3	Hexane	ND	5.5	0.26	ug/kg	
98-82-8	Isopropylbenzene	ND	5.5	0.082	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	1.8	5.5	0.23	ug/kg	J
108-67-8	1,3,5-Trimethylbenzene	1.5	5.5	0.18	ug/kg	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	95%		59-130%
17060-07-0	1,2-Dichloroethane-D4	95%		65-123%
2037-26-5	Toluene-D8	96%		80-124%
460-00-4	4-Bromofluorobenzene	89%		71-132%

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 2

4.3
4

Client Sample ID:	MH10-2A(0.0-2.0)	Date Sampled:	09/18/13
Lab Sample ID:	JB47862-3	Date Received:	09/19/13
Matrix:	SO - Soil	Percent Solids:	77.1
Method:	SW846 8270D SW846 3550C		
Project:	Sunoco - Marcus Hook Facility, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6P830.D	1	10/05/13	KR	09/23/13	OP69179	E6P33
Run #2							

	Initial Weight	Final Volume
Run #1	30.8 g	1.0 ml
Run #2		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
105-67-9	2,4-Dimethylphenol	ND	210	71	ug/kg	
51-28-5	2,4-Dinitrophenol	ND	840	51	ug/kg	
95-48-7	2-Methylphenol	ND	84	48	ug/kg	
	3&4-Methylphenol	ND	84	53	ug/kg	
100-02-7	4-Nitrophenol	ND	420	71	ug/kg	
108-95-2	Phenol	ND	84	44	ug/kg	
83-32-9	Acenaphthene	172	42	12	ug/kg	
120-12-7	Anthracene	71.3	42	15	ug/kg	
56-55-3	Benzo(a)anthracene	67.2	42	14	ug/kg	
50-32-8	Benzo(a)pyrene	52.5	42	13	ug/kg	
205-99-2	Benzo(b)fluoranthene	26.4	42	14	ug/kg	J
191-24-2	Benzo(g,h,i)perylene	58.7	42	16	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	42	16	ug/kg	
92-52-4	1,1'-Biphenyl	ND	84	4.9	ug/kg	
218-01-9	Chrysene	163	42	14	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	42	14	ug/kg	
84-74-2	Di-n-butyl phthalate	ND	84	9.3	ug/kg	
84-66-2	Diethyl phthalate	ND	84	14	ug/kg	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	84	37	ug/kg	
206-44-0	Fluoranthene	65.9	42	19	ug/kg	
86-73-7	Fluorene	183	42	14	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	42	15	ug/kg	
91-57-6	2-Methylnaphthalene	407	84	23	ug/kg	
91-20-3	Naphthalene	ND	42	11	ug/kg	
85-01-8	Phenanthrene	593	42	19	ug/kg	
129-00-0	Pyrene	314	42	16	ug/kg	
110-86-1	Pyridine	ND	84	17	ug/kg	
91-22-5	Quinoline	ND	210	40	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	81%		13-110%

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Page 2 of 2

Client Sample ID:	MH10-2A(0.0-2.0)	Date Sampled:	09/18/13
Lab Sample ID:	JB47862-3	Date Received:	09/19/13
Matrix:	SO - Soil	Percent Solids:	77.1
Method:	SW846 8270D SW846 3550C		
Project:	Sunoco - Marcus Hook Facility, PA		

ABN Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-62-2	Phenol-d5	79%		15-110%
118-79-6	2,4,6-Tribromophenol	113%		20-123%
4165-60-0	Nitrobenzene-d5	80%		10-110%
321-60-8	2-Fluorobiphenyl	91%		17-110%
1718-51-0	Terphenyl-d14	94%		30-124%

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID: MH10-2A(0.0-2.0)
Lab Sample ID: JB47862-3
Matrix: SO - Soil
Method: SW846 8011 SW846 3550B
Project: Sunoco - Marcus Hook Facility, PA

Date Sampled: 09/18/13
Date Received: 09/19/13
Percent Solids: 77.1

Run #1 ^a	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #2	BB51256.D	1	10/01/13	AMA	09/29/13	M:OP35003	M:GBB3022

	Initial Weight	Final Volume
Run #1	30.6 g	50.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	3.2	1.2	ug/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
460-00-4	Bromofluorobenzene (S)	236% ^b		61-167%		
460-00-4	Bromofluorobenzene (S)	108%		61-167%		

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.

(b) Outside control limits due to possible matrix interference.

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	MH10-2A(0.0-2.0)	Date Sampled:	09/18/13
Lab Sample ID:	JB47862-3	Date Received:	09/19/13
Matrix:	SO - Soil	Percent Solids:	77.1
Project:	Sunoco - Marcus Hook Facility, PA		

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cobalt	14.3	5.1	0.067	mg/kg	1	09/30/13	10/02/13	KK	SW846 6010C ¹
Lead	17.8	2.0	0.22	mg/kg	1	09/30/13	10/02/13	KK	SW846 6010C ¹
Nickel	47.6	4.1	0.081	mg/kg	1	09/30/13	10/02/13	KK	SW846 6010C ¹
Vanadium	64.1	5.1	0.075	mg/kg	1	09/30/13	10/02/13	KK	SW846 6010C ¹
Zinc	74.5	2.0	0.24	mg/kg	1	09/30/13	10/02/13	KK	SW846 6010C ¹

(1) Instrument QC Batch: MA32278

(2) Prep QC Batch: MP74915

RL = Reporting Limit
 MDL = Method Detection Limit

U = Indicates a result < MDL
 B = Indicates a result > = MDL but < RL

Report of Analysis

Page 1 of 1

Client Sample ID:	MH10-2A(4.75-5.25)	Date Sampled:	09/19/13
Lab Sample ID:	JB47862-4	Date Received:	09/19/13
Matrix:	SO - Soil	Percent Solids:	81.3
Method:	SW846 8260B		
Project:	Sunoco - Marcus Hook Facility, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2C112074.D	1	10/01/13	DR	n/a	n/a	V2C5159
Run #2	2C112155.D	1	10/03/13	DR	n/a	n/a	V2C5164

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.2 g	10.0 ml	100 ul
Run #2	5.2 g	10.0 ml	5.0 ul

Leaded Gasoline and Aviation Gas List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	3660	130	16	ug/kg	
108-88-3	Toluene	2430	130	18	ug/kg	
100-41-4	Ethylbenzene	17500	130	23	ug/kg	
1330-20-7	Xylene (total)	60600	130	23	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	130	45	ug/kg	
135-98-8	sec-Butylbenzene	11400	650	23	ug/kg	
98-06-6	tert-Butylbenzene	2380	650	21	ug/kg	
110-82-7	Cyclohexane	43100 ^a	13000	670	ug/kg	
107-06-2	1,2-Dichloroethane	ND	130	42	ug/kg	
110-54-3	Hexane	4460	650	70	ug/kg	
98-82-8	Isopropylbenzene	14500	650	19	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	167000 ^a	13000	420	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	80800 ^a	13000	570	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	89%	109%	59-130%
17060-07-0	1,2-Dichloroethane-D4	83%	104%	65-123%
2037-26-5	Toluene-D8	100%	110%	80-124%
460-00-4	4-Bromofluorobenzene	81%	97%	71-132%

(a) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 2

Client Sample ID:	MH10-2A(4.75-5.25)	Date Sampled:	09/19/13
Lab Sample ID:	JB47862-4	Date Received:	09/19/13
Matrix:	SO - Soil	Percent Solids:	81.3
Method:	SW846 8270D SW846 3550C		
Project:	Sunoco - Marcus Hook Facility, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6P794.D	1	10/03/13	KR	09/23/13	OP69179	E6P32
Run #2	6P828.D	20	10/04/13	KR	09/23/13	OP69179	E6P33

	Initial Weight	Final Volume
Run #1	30.4 g	5.0 ml
Run #2	30.4 g	5.0 ml

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
105-67-9	2,4-Dimethylphenol	ND	1000	340	ug/kg	
51-28-5	2,4-Dinitrophenol	ND	4000	250	ug/kg	
95-48-7	2-Methylphenol	ND	400	230	ug/kg	
	3&4-Methylphenol	ND	400	260	ug/kg	
100-02-7	4-Nitrophenol	ND	2000	340	ug/kg	
108-95-2	Phenol	ND	400	210	ug/kg	
83-32-9	Acenaphthene	3160	200	59	ug/kg	
120-12-7	Anthracene	3470	200	71	ug/kg	
56-55-3	Benzo(a)anthracene	1510	200	66	ug/kg	
50-32-8	Benzo(a)pyrene	652	200	62	ug/kg	
205-99-2	Benzo(b)fluoranthene	727	200	68	ug/kg	
191-24-2	Benzo(g,h,i)perylene	874	200	75	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	200	76	ug/kg	
92-52-4	1,1'-Biphenyl	ND	400	23	ug/kg	
218-01-9	Chrysene	3990	200	68	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	142	200	69	ug/kg	J
84-74-2	Di-n-butyl phthalate	ND	400	45	ug/kg	
84-66-2	Diethyl phthalate	ND	400	69	ug/kg	
117-81-7	bis(2-Ethylhexyl)phthalate	709	400	180	ug/kg	
206-44-0	Fluoranthene	2000	200	89	ug/kg	
86-73-7	Fluorene	19600	200	66	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	305	200	70	ug/kg	
91-57-6	2-Methylnaphthalene	216000 ^a	8100	2300	ug/kg	
91-20-3	Naphthalene	47800 ^a	4000	1100	ug/kg	
85-01-8	Phenanthrene	51000 ^a	4000	1800	ug/kg	
129-00-0	Pyrene	9750	200	78	ug/kg	
110-86-1	Pyridine	ND	400	81	ug/kg	
91-22-5	Quinoline	ND	1000	190	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	66%	0% ^b	13-110%

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Page 2 of 2

Client Sample ID:	MH10-2A(4.75-5.25)	Date Sampled:	09/19/13
Lab Sample ID:	JB47862-4	Date Received:	09/19/13
Matrix:	SO - Soil	Percent Solids:	81.3
Method:	SW846 8270D SW846 3550C		
Project:	Sunoco - Marcus Hook Facility, PA		

ABN Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-62-2	Phenol-d5	58%	0% b	15-110%
118-79-6	2,4,6-Tribromophenol	127%	0% b	20-123%
4165-60-0	Nitrobenzene-d5	168%	0% b	10-110%
321-60-8	2-Fluorobiphenyl	118%	0% b	17-110%
1718-51-0	Terphenyl-d14	111%	0% b	30-124%

(a) Result is from Run# 2

(b) Outside control limits due to dilution.

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID: MH10-2A(4.75-5.25)
Lab Sample ID: JB47862-4
Matrix: SO - Soil
Method: SW846 8011 SW846 3550B
Project: Sunoco - Marcus Hook Facility, PA

Date Sampled: 09/19/13
 Date Received: 09/19/13
 Percent Solids: 81.3

Run #1 ^a	File ID BB51257.D	DF 1	Analyzed 10/01/13	By AMA	Prep Date 09/29/13	Prep Batch M:OP35003	Analytical Batch M:GBB3022
Run #2							

Initial Weight Run #1 30.9 g	Final Volume 50.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	3.0	1.1	ug/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
460-00-4	Bromofluorobenzene (S)	230% ^b		61-167%		
460-00-4	Bromofluorobenzene (S)	88%		61-167%		

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.

(b) Outside control limits due to possible matrix interference.

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	MH10-2A(4.75-5.25)	Date Sampled:	09/19/13
Lab Sample ID:	JB47862-4	Date Received:	09/19/13
Matrix:	SO - Soil	Percent Solids:	81.3
Project:	Sunoco - Marcus Hook Facility, PA		

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cobalt	5.1 B	6.3	0.084	mg/kg	1	09/30/13	10/02/13 KK	SW846 6010C ¹	SW846 3050B ²
Lead	38.9	2.5	0.27	mg/kg	1	09/30/13	10/02/13 KK	SW846 6010C ¹	SW846 3050B ²
Nickel	15.0	5.1	0.10	mg/kg	1	09/30/13	10/02/13 KK	SW846 6010C ¹	SW846 3050B ²
Vanadium	41.9	6.3	0.093	mg/kg	1	09/30/13	10/02/13 KK	SW846 6010C ¹	SW846 3050B ²
Zinc	46.7	2.5	0.30	mg/kg	1	09/30/13	10/02/13 KK	SW846 6010C ¹	SW846 3050B ²

(1) Instrument QC Batch: MA32278

(2) Prep QC Batch: MP74915

RL = Reporting Limit
 MDL = Method Detection Limit

U = Indicates a result < MDL
 B = Indicates a result > = MDL but < RL

Report of Analysis

Page 1 of 1

Client Sample ID:	MH10-3A(0.0-2.0)	Date Sampled:	09/19/13
Lab Sample ID:	JB47862-5	Date Received:	09/19/13
Matrix:	SO - Soil	Percent Solids:	89.2
Method:	SW846 8260B		
Project:	Sunoco - Marcus Hook Facility, PA		

Run #1 ^a	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #2	D213734.D	1	09/29/13	CM	n/a	n/a	VD8729

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.0 g	10.0 ml	100 ul
Run #2			

Leaded Gasoline and Aviation Gas List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	120	14	ug/kg	
108-88-3	Toluene	ND	120	12	ug/kg	
100-41-4	Ethylbenzene	43.8	120	31	ug/kg	J
1330-20-7	Xylene (total)	ND	120	16	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	120	28	ug/kg	
135-98-8	sec-Butylbenzene	1920	590	13	ug/kg	
98-06-6	tert-Butylbenzene	381	590	35	ug/kg	J
110-82-7	Cyclohexane	310	590	15	ug/kg	J
107-06-2	1,2-Dichloroethane	ND	120	16	ug/kg	
110-54-3	Hexane	ND	590	28	ug/kg	
98-82-8	Isopropylbenzene	2020	590	8.8	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	590	25	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	590	19	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	90%		59-130%
17060-07-0	1,2-Dichloroethane-D4	95%		65-123%
2037-26-5	Toluene-D8	120%		80-124%
460-00-4	4-Bromofluorobenzene	123%		71-132%

(a) Dilution required due to matrix interference.

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 2

Client Sample ID: MH10-3A(0.0-2.0)
Lab Sample ID: JB47862-5
Matrix: SO - Soil
Method: SW846 8270D SW846 3550C
Project: Sunoco - Marcus Hook Facility, PA

Date Sampled: 09/19/13
Date Received: 09/19/13
Percent Solids: 89.2

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6P795.D	1	10/03/13	KR	09/23/13	OP69179	E6P32
Run #2	6P829.D	10	10/04/13	KR	09/23/13	OP69179	E6P33

	Initial Weight	Final Volume
Run #1	32.7 g	1.0 ml
Run #2	32.7 g	1.0 ml

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
105-67-9	2,4-Dimethylphenol	ND	170	58	ug/kg	
51-28-5	2,4-Dinitrophenol	ND	690	42	ug/kg	
95-48-7	2-Methylphenol	ND	69	39	ug/kg	
	3&4-Methylphenol	ND	69	44	ug/kg	
100-02-7	4-Nitrophenol	ND	340	58	ug/kg	
108-95-2	Phenol	ND	69	36	ug/kg	
83-32-9	Acenaphthene	1740	34	9.9	ug/kg	
120-12-7	Anthracene	924	34	12	ug/kg	
56-55-3	Benzo(a)anthracene	1030	34	11	ug/kg	
50-32-8	Benzo(a)pyrene	1130	34	10	ug/kg	
205-99-2	Benzo(b)fluoranthene	345	34	11	ug/kg	
191-24-2	Benzo(g,h,i)perylene	1090	34	13	ug/kg	
207-08-9	Benzo(k)fluoranthene	319	34	13	ug/kg	
92-52-4	1,1'-Biphenyl	ND	69	4.0	ug/kg	
218-01-9	Chrysene	2620	34	12	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	324	34	12	ug/kg	
84-74-2	Di-n-butyl phthalate	ND	69	7.6	ug/kg	
84-66-2	Diethyl phthalate	ND	69	12	ug/kg	
117-81-7	bis(2-Ethylhexyl)phthalate	244	69	30	ug/kg	
206-44-0	Fluoranthene	ND	34	15	ug/kg	
206-44-0	Fluoranthene	987 ^a	340	150	ug/kg	
86-73-7	Fluorene	4310 ^a	340	110	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	256	34	12	ug/kg	
91-57-6	2-Methylnaphthalene	20700 ^a	690	190	ug/kg	
91-20-3	Naphthalene	ND	34	9.4	ug/kg	
85-01-8	Phenanthrene	10800 ^a	340	160	ug/kg	
129-00-0	Pyrene	5550 ^a	340	130	ug/kg	
110-86-1	Pyridine	ND	69	14	ug/kg	
91-22-5	Quinoline	ND	170	32	ug/kg	

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Page 2 of 2

Client Sample ID:	MH10-3A(0.0-2.0)	Date Sampled:	09/19/13
Lab Sample ID:	JB47862-5	Date Received:	09/19/13
Matrix:	SO - Soil	Percent Solids:	89.2
Method:	SW846 8270D SW846 3550C		
Project:	Sunoco - Marcus Hook Facility, PA		

ABN Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	95%	113% ^b	13-110%
4165-62-2	Phenol-d5	105%	85%	15-110%
118-79-6	2,4,6-Tribromophenol	120%	115%	20-123%
4165-60-0	Nitrobenzene-d5	104%	121% ^b	10-110%
321-60-8	2-Fluorobiphenyl	101%	114% ^b	17-110%
1718-51-0	Terphenyl-d14	94%	108%	30-124%

(a) Result is from Run# 2

(b) Outside control limits due to dilution.

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	MH10-3A(0.0-2.0)	Date Sampled:	09/19/13
Lab Sample ID:	JB47862-5	Date Received:	09/19/13
Matrix:	SO - Soil	Percent Solids:	89.2
Method:	SW846 8011 SW846 3550B		
Project:	Sunoco - Marcus Hook Facility, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	BB51258.D	1	10/01/13	AMA	09/29/13	M:OP35003	M:GBB3022
Run #2							

	Initial Weight	Final Volume
Run #1	30.5 g	50.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	2.8	1.0	ug/kg	
CAS No. Surrogate Recoveries Run# 1 Run# 2 Limits						
460-00-4	Bromofluorobenzene (S)	224% ^b			61-167%	
460-00-4	Bromofluorobenzene (S)	96%			61-167%	

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.

(b) Outside control limits due to possible matrix interference.

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	MH10-3A(0.0-2.0)	Date Sampled:	09/19/13
Lab Sample ID:	JB47862-5	Date Received:	09/19/13
Matrix:	SO - Soil	Percent Solids:	89.2
Project:	Sunoco - Marcus Hook Facility, PA		

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cobalt	11.2	5.7	0.075	mg/kg	1	09/30/13	10/02/13	KK	SW846 6010C ¹
Lead ^a	53.6	4.5	0.48	mg/kg	2	09/30/13	10/03/13	KK	SW846 6010C ²
Nickel ^a	106	9.1	0.18	mg/kg	2	09/30/13	10/03/13	KK	SW846 6010C ²
Vanadium ^a	184	28	0.41	mg/kg	5	09/30/13	10/03/13	KK	SW846 6010C ²
Zinc	591	2.3	0.26	mg/kg	1	09/30/13	10/02/13	KK	SW846 6010C ¹

(1) Instrument QC Batch: MA32278

(2) Instrument QC Batch: MA32286

(3) Prep QC Batch: MP74915

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit
 MDL = Method Detection Limit

U = Indicates a result < MDL
 B = Indicates a result > = MDL but < RL

Report of Analysis

Page 1 of 1

Client Sample ID:	MH10-4A(0.0-2.0)	Date Sampled:	09/19/13
Lab Sample ID:	JB47862-6	Date Received:	09/19/13
Matrix:	SO - Soil	Percent Solids:	89.6
Method:	SW846 8260B		
Project:	Sunoco - Marcus Hook Facility, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	I188454.D	1	09/30/13	SJM	n/a	n/a	VI7608
Run #2							

	Initial Weight
Run #1	5.7 g
Run #2	

Leaded Gasoline and Aviation Gas List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.98	0.12	ug/kg	
108-88-3	Toluene	ND	0.98	0.10	ug/kg	
100-41-4	Ethylbenzene	ND	0.98	0.26	ug/kg	
1330-20-7	Xylene (total)	ND	0.98	0.14	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	0.98	0.23	ug/kg	
135-98-8	sec-Butylbenzene	ND	4.9	0.11	ug/kg	
98-06-6	tert-Butylbenzene	ND	4.9	0.29	ug/kg	
110-82-7	Cyclohexane	0.59	4.9	0.12	ug/kg	J
107-06-2	1,2-Dichloroethane	ND	0.98	0.13	ug/kg	
110-54-3	Hexane	0.90	4.9	0.23	ug/kg	J
98-82-8	Isopropylbenzene	ND	4.9	0.073	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	4.9	0.20	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	4.9	0.16	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	90%		59-130%
17060-07-0	1,2-Dichloroethane-D4	111%		65-123%
2037-26-5	Toluene-D8	92%		80-124%
460-00-4	4-Bromofluorobenzene	104%		71-132%

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 2

Client Sample ID:	MH10-4A(0.0-2.0)	Date Sampled:	09/19/13
Lab Sample ID:	JB47862-6	Date Received:	09/19/13
Matrix:	SO - Soil	Percent Solids:	89.6
Method:	SW846 8270D SW846 3550C		
Project:	Sunoco - Marcus Hook Facility, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6P697.D	1	10/01/13	KR	09/23/13	OP69179	E6P29
Run #2							

	Initial Weight	Final Volume
Run #1	32.6 g	1.0 ml
Run #2		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
105-67-9	2,4-Dimethylphenol	ND	170	58	ug/kg	
51-28-5	2,4-Dinitrophenol	ND	680	42	ug/kg	
95-48-7	2-Methylphenol	ND	68	39	ug/kg	
	3&4-Methylphenol	ND	68	43	ug/kg	
100-02-7	4-Nitrophenol	ND	340	58	ug/kg	
108-95-2	Phenol	ND	68	36	ug/kg	
83-32-9	Acenaphthene	ND	34	9.9	ug/kg	
120-12-7	Anthracene	ND	34	12	ug/kg	
56-55-3	Benzo(a)anthracene	ND	34	11	ug/kg	
50-32-8	Benzo(a)pyrene	16.4	34	10	ug/kg	J
205-99-2	Benzo(b)fluoranthene	18.6	34	11	ug/kg	J
191-24-2	Benzo(g,h,i)perylene	74.8	34	13	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	34	13	ug/kg	
92-52-4	1,1'-Biphenyl	ND	68	4.0	ug/kg	
218-01-9	Chrysene	22.8	34	12	ug/kg	J
53-70-3	Dibenzo(a,h)anthracene	ND	34	12	ug/kg	
84-74-2	Di-n-butyl phthalate	ND	68	7.6	ug/kg	
84-66-2	Diethyl phthalate	ND	68	12	ug/kg	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	68	30	ug/kg	
206-44-0	Fluoranthene	29.7	34	15	ug/kg	J
86-73-7	Fluorene	ND	34	11	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	34	12	ug/kg	
91-57-6	2-Methylnaphthalene	ND	68	19	ug/kg	
91-20-3	Naphthalene	ND	34	9.3	ug/kg	
85-01-8	Phenanthrene	ND	34	16	ug/kg	
129-00-0	Pyrene	31.6	34	13	ug/kg	J
110-86-1	Pyridine	ND	68	14	ug/kg	
91-22-5	Quinoline	ND	170	32	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	91%		13-110%

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Page 2 of 2

Client Sample ID:	MH10-4A(0.0-2.0)	Date Sampled:	09/19/13
Lab Sample ID:	JB47862-6	Date Received:	09/19/13
Matrix:	SO - Soil	Percent Solids:	89.6
Method:	SW846 8270D SW846 3550C		
Project:	Sunoco - Marcus Hook Facility, PA		

ABN Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-62-2	Phenol-d5	102%		15-110%
118-79-6	2,4,6-Tribromophenol	100%		20-123%
4165-60-0	Nitrobenzene-d5	98%		10-110%
321-60-8	2-Fluorobiphenyl	106%		17-110%
1718-51-0	Terphenyl-d14	97%		30-124%

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID: MH10-4A(0.0-2.0)
Lab Sample ID: JB47862-6
Matrix: SO - Soil
Method: SW846 8011 SW846 3550B
Project: Sunoco - Marcus Hook Facility, PA

Date Sampled: 09/19/13
Date Received: 09/19/13
Percent Solids: 89.6

Run #1 ^a	File ID BB51260.D	DF 1	Analyzed 10/01/13	By AMA	Prep Date 09/29/13	Prep Batch M:OP35003	Analytical Batch M:GBB3022
Run #2							

Initial Weight Run #1 30.3 g	Final Volume 50.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	2.8	1.0	ug/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
460-00-4	Bromofluorobenzene (S)	244% ^b		61-167%		
460-00-4	Bromofluorobenzene (S)	115%		61-167%		

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.

(b) Outside control limits due to possible matrix interference.

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	MH10-4A(0.0-2.0)	Date Sampled:	09/19/13
Lab Sample ID:	JB47862-6	Date Received:	09/19/13
Matrix:	SO - Soil	Percent Solids:	89.6
Project:	Sunoco - Marcus Hook Facility, PA		

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cobalt	9.8	5.8	0.077	mg/kg	1	09/30/13	10/02/13	KK	SW846 6010C ¹
Lead ^a	54.9	7.0	0.74	mg/kg	3	09/30/13	10/05/13	GT	SW846 6010C ²
Nickel ^a	106	14	0.28	mg/kg	3	09/30/13	10/05/13	GT	SW846 6010C ²
Vanadium ^a	173	17	0.25	mg/kg	3	09/30/13	10/05/13	GT	SW846 6010C ²
Zinc	279	2.3	0.27	mg/kg	1	09/30/13	10/02/13	KK	SW846 6010C ¹

(1) Instrument QC Batch: MA32278

(2) Instrument QC Batch: MA32318

(3) Prep QC Batch: MP74915

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit
 MDL = Method Detection Limit

U = Indicates a result < MDL
 B = Indicates a result > = MDL but < RL

Report of Analysis

Page 1 of 1

Client Sample ID:	MH10-4A(5.5-6.0)	Date Sampled:	09/19/13
Lab Sample ID:	JB47862-7	Date Received:	09/19/13
Matrix:	SO - Soil	Percent Solids:	80.3
Method:	SW846 8260B		
Project:	Sunoco - Marcus Hook Facility, PA		

Run #1 ^a	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #2	2C112075.D	1	10/01/13	DR	n/a	n/a	V2C5159

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.7 g	10.0 ml	100 ul
Run #2			

Leaded Gasoline and Aviation Gas List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	77.7	120	15	ug/kg	J
108-88-3	Toluene	32.5	120	17	ug/kg	J
100-41-4	Ethylbenzene	183	120	21	ug/kg	
1330-20-7	Xylene (total)	323	120	22	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	120	42	ug/kg	
135-98-8	sec-Butylbenzene	270	610	22	ug/kg	
98-06-6	tert-Butylbenzene	ND	610	20	ug/kg	
110-82-7	Cyclohexane	697	610	31	ug/kg	
107-06-2	1,2-Dichloroethane	ND	120	39	ug/kg	
110-54-3	Hexane	453	610	66	ug/kg	J
98-82-8	Isopropylbenzene	335	610	18	ug/kg	J
95-63-6	1,2,4-Trimethylbenzene	2050	610	19	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	547	610	27	ug/kg	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	90%		59-130%
17060-07-0	1,2-Dichloroethane-D4	83%		65-123%
2037-26-5	Toluene-D8	93%		80-124%
460-00-4	4-Bromofluorobenzene	83%		71-132%

(a) Dilution required due to matrix interference.

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 2

Client Sample ID:	MH10-4A(5.5-6.0)	Date Sampled:	09/19/13
Lab Sample ID:	JB47862-7	Date Received:	09/19/13
Matrix:	SO - Soil	Percent Solids:	80.3
Method:	SW846 8270D SW846 3550C		
Project:	Sunoco - Marcus Hook Facility, PA		

	File ID	DF	Analyzed By	Prep Date	Prep Batch	Analytical Batch
Run #1	6P698.D	1	10/01/13 KR	09/23/13	OP69179	E6P29
Run #2	6P798.D	4	10/03/13 KR	09/23/13	OP69179	E6P32
Run #3	6P827.D	40	10/04/13 KR	09/23/13	OP69179	E6P33

	Initial Weight	Final Volume
Run #1	30.2 g	1.0 ml
Run #2	30.2 g	1.0 ml
Run #3	30.2 g	1.0 ml

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
105-67-9	2,4-Dimethylphenol	ND	210	69	ug/kg	
51-28-5	2,4-Dinitrophenol	ND	820	50	ug/kg	
95-48-7	2-Methylphenol	ND	82	47	ug/kg	
	3&4-Methylphenol	ND	82	52	ug/kg	
100-02-7	4-Nitrophenol	ND	410	70	ug/kg	
108-95-2	Phenol	ND	82	43	ug/kg	
83-32-9	Acenaphthene	2920	41	12	ug/kg	
120-12-7	Anthracene	1320	41	14	ug/kg	
56-55-3	Benzo(a)anthracene	138	41	13	ug/kg	
50-32-8	Benzo(a)pyrene	87.0	41	13	ug/kg	
205-99-2	Benzo(b)fluoranthene	33.8	41	14	ug/kg	J
191-24-2	Benzo(g,h,i)perylene	81.9	41	15	ug/kg	
207-08-9	Benzo(k)fluoranthene	32.1	41	16	ug/kg	J
92-52-4	1,1'-Biphenyl	ND	82	4.8	ug/kg	
218-01-9	Chrysene	287	41	14	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	41	14	ug/kg	
84-74-2	Di-n-butyl phthalate	ND	82	9.2	ug/kg	
84-66-2	Diethyl phthalate	ND	82	14	ug/kg	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	82	36	ug/kg	
206-44-0	Fluoranthene	355	41	18	ug/kg	
86-73-7	Fluorene	5110 ^a	160	54	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	21.4	41	14	ug/kg	J
91-57-6	2-Methylnaphthalene	69900 ^b	3300	920	ug/kg	
91-20-3	Naphthalene	ND	41	11	ug/kg	
85-01-8	Phenanthrene	10000 ^a	160	75	ug/kg	
129-00-0	Pyrene	2080	41	16	ug/kg	
110-86-1	Pyridine	ND	82	16	ug/kg	
91-22-5	Quinoline	ND	210	39	ug/kg	

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Page 2 of 2

Client Sample ID:	MH10-4A(5.5-6.0)	Date Sampled:	09/19/13
Lab Sample ID:	JB47862-7	Date Received:	09/19/13
Matrix:	SO - Soil	Percent Solids:	80.3
Method:	SW846 8270D SW846 3550C		
Project:	Sunoco - Marcus Hook Facility, PA		

ABN Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Run# 3	Limits
367-12-4	2-Fluorophenol	96%	94%	87%	13-110%
4165-62-2	Phenol-d5	113% ^c	79%	80%	15-110%
118-79-6	2,4,6-Tribromophenol	117%	115%	121%	20-123%
4165-60-0	Nitrobenzene-d5	102%	103%	83%	10-110%
321-60-8	2-Fluorobiphenyl	92%	111% ^d	114% ^d	17-110%
1718-51-0	Terphenyl-d14	93%	105%	103%	30-124%

(a) Result is from Run# 2

(b) Result is from Run# 3

(c) Outside of in house control limits, but within reasonable method recovery limits.

(d) Outside of in house control limits due to dilution, but within reasonable method recovery limits.

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID: MH10-4A(5.5-6.0)
Lab Sample ID: JB47862-7
Matrix: SO - Soil
Method: SW846 8011 SW846 3550B
Project: Sunoco - Marcus Hook Facility, PA

Date Sampled: 09/19/13
Date Received: 09/19/13
Percent Solids: 80.3

Run #1 ^a	File ID BB51261.D	DF 1	Analyzed 10/01/13	By AMA	Prep Date 09/29/13	Prep Batch M:OP35003	Analytical Batch M:GBB3022
Run #2							

Initial Weight Run #1 30.1 g	Final Volume 50.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	3.1	1.1	ug/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
460-00-4	Bromofluorobenzene (S)	244% ^b		61-167%		
460-00-4	Bromofluorobenzene (S)	113%		61-167%		

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.

(b) Outside control limits due to possible matrix interference.

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	MH10-4A(5.5-6.0)	Date Sampled:	09/19/13
Lab Sample ID:	JB47862-7	Date Received:	09/19/13
Matrix:	SO - Soil	Percent Solids:	80.3
Project:	Sunoco - Marcus Hook Facility, PA		

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cobalt	10.2	6.5	0.086	mg/kg	1	09/30/13	10/02/13 KK	SW846 6010C ¹	SW846 3050B ²
Lead	17.0	2.6	0.28	mg/kg	1	09/30/13	10/02/13 KK	SW846 6010C ¹	SW846 3050B ²
Nickel	16.0	5.2	0.10	mg/kg	1	09/30/13	10/02/13 KK	SW846 6010C ¹	SW846 3050B ²
Vanadium	57.1	6.5	0.095	mg/kg	1	09/30/13	10/02/13 KK	SW846 6010C ¹	SW846 3050B ²
Zinc	54.4	2.6	0.30	mg/kg	1	09/30/13	10/02/13 KK	SW846 6010C ¹	SW846 3050B ²

(1) Instrument QC Batch: MA32278

(2) Prep QC Batch: MP74915

RL = Reporting Limit
 MDL = Method Detection Limit

U = Indicates a result < MDL
 B = Indicates a result > = MDL but < RL



Misc. Forms

5

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- Chain of Custody (Accutest Labs of New England, Inc.)

CHAIN OF CUSTODY

PAGE ____ OF ____

2235 Route 130, Dayton, NJ 08810
 TEL. 732-329-0200 FAX: 732-329-3499/3480
www.accutest.com

Client / Reporting Information		Project Information										FED-EX Tracking #		Bottle Order Control #					
Company Name STANTEC		Project Name: <u>Sunoco - Marcus Hook</u>										Accutest Quote #		Accutest Job #					
Street Address 1060 ANDREW DRIVE, SUITE 140		Street										Billing Information (if different from Report to)		JB47862					
City WEST CHESTER PA	State	Zip	City	State	Company Name														
Project Contact JENNIFER MENGES		E-mail 213402353		Project #		Street Address													
Phone # 610.840.2500	Fax #	Client Purchase Order #		City		State		Zip											
Sampler(s) Name(s) JASON COBBETT 484.667.6098		Phone #		Project Manager		Attention:													
Acutest Sample #		Field ID / Point of Collection		Collection		Sampled by	Matrix	# of bottles	Number of preserved Bottles						Requested Analysis (see TEST CODE sheet)		Matrix Codes		
1	MH10-1A (0.0-2.0)	9.18.13	1435	JC	50				5	HCl	NaOH	HNO3	HSCo4	None	D/Water	MEOH	ENCORE	PADP SERO CREATE OIL PARAMETERS FCC (DIRECTIVE ACTION LEADS AND UNLEADED GASOLINE AND NO. 2,4,5 & FUEL OILS	DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL - Sludge SED - Sediment OI - Oil LIC - Liquid AR - Ash SOL - Other Solid WP - Wipe FB - Field Blank EB - Equipment Blank RB - Rinse Blank TB - Trip Blank
2	MH10-1A (3.5-4.0)	9.19.13	1305	JR	50	5													
3	MH10-2A (0.0-2.0)	9.18.13	1530	JC	50	5													
4	MH10-2A (4.75-5.25)	9.19.13	1330	JC	50	5													
5	MH10-3A (0.0-2.0)	9.19.13	1100	JC	50	5													
6	MH10-4A (0.0-2.0)	9.19.13	1235	JC	50	5													
7	MH10-4A (5.5-6.0)	9.19.13	1245	JC	50	5													
																LAB USE ONLY			
																C34			
																14KL			
																4935			
																SUB			
																D.I. slurry VOC vials frozen storage			
																Date: 9/18/13 File# 20140 Initials: [Signature]			
Turnaround Time (Business days)		Data Deliverable Information										Comments / Special Instructions							
<input checked="" type="checkbox"/> Std. 10 Business Days <input type="checkbox"/> 5 Day RUSH <input type="checkbox"/> 3 Day EMERGENCY <input type="checkbox"/> 2 Day EMERGENCY <input type="checkbox"/> 1 Day EMERGENCY <input type="checkbox"/> other _____ <small>Emergency & Rush T/A data available VIA Lablink</small>		Approved By (Accutest PM): / Date: Rec'd at Exton Service Center <i>9/19/13</i>										<input type="checkbox"/> Commercial "A" (Level 1) <input type="checkbox"/> NYASP Category A <input type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> NYASP Category B <input type="checkbox"/> FULLT1 (Level 3+4) <input type="checkbox"/> State Forms <input type="checkbox"/> NJ Reduced <input checked="" type="checkbox"/> EDD Form: <i>EPA15</i> <input type="checkbox"/> Commercial "C" <input type="checkbox"/> Other _____ <small>Commercial "A" = Results Only Commercial "B" = Results + QC Summary NJ Reduced = Results + QC Summary + Partial Raw data</small>							
Sample Custody must be documented below each time samples change possession, including courier delivery.																			
Relinquished by Sampler: 1	Date Time: 9/19/13 1515	Received By: 1					Relinquished By: 2							Date Time: 9/19/13 1616	Received By: 2				
Relinquished by Sampler: 3	Date Time: 9/20/13 1810	Received By: 3					Relinquished By: 4							Date Time: 9/20/13	Received By: 4				
Relinquished by: 5	Date Time:	Received By: 5					Custody Seal #:							On Ice	Cooler Temp.	11 C-1P			
												<i>[Signatures]</i>							

IA

5.1

JB47862: Chain of Custody

Page 1 of 4

JB47862

SAMPLE #	MEOH VIAL	D.L. VIAL	D.L. VIAL
1	3958	4011	4010
2	3963	4019	4018
3	3965	4025	4024
4	3957	4008	4009
5	3959	4012	4013
6	3963	4030	4031
7	3961	4017	4016
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
30			
31			
32			
33			
34			
35			
36			
37			
38			
39			
40			
41			
42			
43			
44			
45			
46			
47			
48			
49			
50			



Accutest Laboratories Sample Receipt Summary

Accutest Job Number: JB47862 **Client:** _____ **Project:** _____
Date / Time Received: 9/19/2013 **Delivery Method:** _____ **Airbill #'s:** _____
Cooler Temps (Initial/Adjusted): #1: (1.1/1.1); 0

<u>Cooler Security</u>		Y or N			<u>Sample Integrity - Documentation</u>		Y or N	
1. Custody Seals Present:		<input checked="" type="checkbox"/> <input type="checkbox"/>	3. COC Present:		<input checked="" type="checkbox"/> <input type="checkbox"/>	1. Sample labels present on bottles:		<input checked="" type="checkbox"/> <input type="checkbox"/>
2. Custody Seals Intact:		<input checked="" type="checkbox"/> <input type="checkbox"/>	4. Smpl Dates/Time OK		<input checked="" type="checkbox"/> <input type="checkbox"/>	2. Container labeling complete:		<input checked="" type="checkbox"/> <input type="checkbox"/>
<u>Cooler Temperature</u>		Y or N			3. Sample container label / COC agree:		<input checked="" type="checkbox"/> <input type="checkbox"/>	
1. Temp criteria achieved:		<input checked="" type="checkbox"/> <input type="checkbox"/>	IR Gun		<u>Sample Integrity - Condition</u>		Y or N	
2. Cooler temp verification:		Ice (Bag)		1. Sample recvd within HT:		<input checked="" type="checkbox"/> <input type="checkbox"/>		
3. Cooler media:		1		2. All containers accounted for:		<input checked="" type="checkbox"/> <input type="checkbox"/>		
4. No. Coolers:				3. Condition of sample:		Intact		
<u>Quality Control Preservatio</u>		Y or N	N/A	<u>Sample Integrity - Instructions</u>		Y or N	N/A	
1. Trip Blank present / cooler:		<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	1. Analysis requested is clear:		<input checked="" type="checkbox"/> <input type="checkbox"/>			
2. Trip Blank listed on COC:		<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	2. Bottles received for unspecified tests		<input type="checkbox"/> <input checked="" type="checkbox"/>			
3. Samples preserved properly:		<input checked="" type="checkbox"/> <input type="checkbox"/>	3. Sufficient volume recvd for analysis:		<input checked="" type="checkbox"/> <input type="checkbox"/>			
4. VOCs headspace free:		<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	4. Compositing instructions clear:		<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>			
5. Filtering instructions clear:		<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	5. Filtering instructions clear:		<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>			

Comments

Accutest Laboratories
V:732.329.0200

2235 US Highway 130
F: 732.329.3499

Dayton, New Jersey
www.accutest.com

5.1

5

JB47862: Chain of Custody

Page 3 of 4

**Job Change Order:**

JB47862

Requested Date: 10/18/2013
Account Name: Stantec Consulting Services Inc.
Project Description: Sunoco - Marcus Hook Facility, PA
CSR: kristinb
Sample #: JB47862-ALL
Dept:

Received Date: 9/19/2013
Due Date: 10/3/2013
Deliverable: REDT2
TAT (Days): 14

Change:
Please relog/retrieve ZN on same report and reissue.

Above Changes Per: Client / Stephanie Andrews

Date: 10/18/2013

To Client: This Change Order is confirmation of the revisions, previously discussed with the Accutest Client Service Representative.

Page 1 of 1

JB47862: Chain of Custody
Page 4 of 4

CHAIN OF CUSTODY
PAGE 1 OF 1

 2235 Route 130, Dayton, NJ 08810
 TEL. 732-329-0200 FAX: 732-329-3499/3480
 www.accutest.com

Client / Reporting Information		Project Information									FED-EX Tracking #											Bottle Order Control #		
Company Name: Accutest Laboratories		Project Name: Sunoco - Marcus Hook Facility, PA									Accutest Quote # JB47862											Accutest Job # JB47862		
Street Address 2235 Route 130		Street			Billing Information (if different from Report to)						Requested Analysis (see TEST CODE sheet)											Matrix Codes		
City State Zip Dayton NJ 08810		City State			Company Name																	DW - Drinking Water GW - Ground Water VW - Water SW - Surface Water SC - Soil SL - Sludge SED - Sediment OI - Oil LIQ - Other Liquid SOL - Other Solid WP - Wipe FB - Field Blank EB - Equipment Blank RB - Rinse Blank TB - Trip Blank		
Project Contact kristinb		E-mail kristinb@accutest.com			Project #			Street Address																
Phone # 732-329-0200		Fax #			Client Purchase Order #			City		State		Zip												
Sampler(s) Name(s) JC		Phone			Project Manager			Attention:																
Accutest Sample #		Field ID / Point of Collection		Collection			Number of preserved Bottles 10/13/08	8	Data Deliverable Information											LAB USE ONLY 1F				
				Date	Time	Sampled by			Media	# of bottles	EPA	COMH	HOM	PCMH	PCMH	DI Water	HOM	DI Water	RECD					
				1 MH10-1A(0.0-2.0)	9/18/13 2:35:00 PM	JC SO																X		
				2 MH10-1A(3.5-4.0)	9/18/13 1:05:00 PM	JC SO																X		
				3 MH10-2A(0.0-2.0)	9/18/13 3:30:00 PM	JC SO																X		
				4 MH10-2A(4.75-5.25)	9/18/13 1:30:00 PM	JC SO																X		
				5 MH10-3A(0.0-2.0)	9/18/13 11:00:00 AM	JC SO																X		
				6 MH10-4A(0.0-2.0)	9/18/13 12:35:00 PM	JC SO																X		
				7 MH10-4A(5.5-6.0)	9/18/13 12:45:00 PM	JC SO																X		
Turnaround Time (Business days)		Comments / Special Instructions																						
Approved By (Accutest PM): / Date:			Data Deliverable Information																					
<input checked="" type="checkbox"/> Std. 10 Business Days <input type="checkbox"/> 5 Day RUSH <input type="checkbox"/> 3 Day EMERGENCY <input type="checkbox"/> 2 Day EMERGENCY <input type="checkbox"/> 1 Day EMERGENCY <input type="checkbox"/> other _____			<input type="checkbox"/> Commercial "A" (Level 1) <input type="checkbox"/> NYASP Category A <input type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> NYASP Category B <input type="checkbox"/> FULLY1 (Level 3+4) <input type="checkbox"/> State Forms <input checked="" type="checkbox"/> NJ Reduced <input type="checkbox"/> EDD Format _____ <input type="checkbox"/> Commercial "C" <input type="checkbox"/> Other _____																					
Commercial "A" = Results Only Commercial "B" = Results + QC Summary NJ Reduced = Results + QC Summary + Partial Raw data																								
Emergency & Rush-TA data available VIA Lablink																								
Sample Custody must be documented below each time samples change possession, including courier delivery.																								
Relinquished by Sampler:	Date Time: 9/20/13 1700	Received By: 1	Relinquished By: FED EX	Date Time: 9/21/13 10:00	Received By: 2																			
1			2																					
Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:																			
3		3	4		4																			
Relinquished by:	Date Time:	Received By:	Custody Seal #	Preserved when applicable	On Ice																			
5		5	300	<input type="checkbox"/> intact <input type="checkbox"/> Not intact	1.9																			

JB47862: Chain of Custody
Page 1 of 2
Accutest Labs of New England, Inc.



Accutest Laboratories Sample Receipt Summary

Accutest Job Number: JB47862

Client: ACNJ

Immediate Client Services Action Required: No

Date / Time Received: 9/21/2013

Delivery Method:

Client Service Action Required at Login: No

Project: SUB

No. Coolers:

1

Airbill #'s:

Cooler Security**Y or N****Y or N**

1. Custody Seals Present: 3. COC Present:
 2. Custody Seals Intact: 4. Smpl Dates/Time OK

Cooler Temperature**Y or N**

1. Temp criteria achieved:
 2. Cooler temp verification: Infared gun
 3. Cooler media: Ice (bag)

Quality Control Preservation**Y or N****N/A**

1. Trip Blank present / cooler:
 2. Trip Blank listed on COC:
 3. Samples preserved properly:
 4. VOCs headspace free:

Sample Integrity - Documentation**Y or N**

1. Sample labels present on bottles:
 2. Container labeling complete:
 3. Sample container label / COC agree:

Sample Integrity - Condition**Y or N**

1. Sample rcvd within HT:
 2. All containers accounted for:
 3. Condition of sample: Intact

Sample Integrity - Instructions**Y or N****N/A**

1. Analysis requested is clear:
 2. Bottles received for unspecified tests:
 3. Sufficient volume rcvd for analysis:
 4. Compositing instructions clear:
 5. Filtering instructions clear:

Comments

JB47862: Chain of Custody

Page 2 of 2